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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/800,012

03/15/2004

Philip J. Lingle

3691.663

6810

23117

7590

05/17/2007

NIXON & VANDERHYE, PC

901 NORTH GLEBE ROAD, 11TH FLOOR
ARLINGTON, VA 22203

EXAMINER

BLACKWELL, GWENDOLYN ANNETTE

ART UNIT

PAPER NUMBER

1775

MAIL DATE

DELIVERY MODE

05/17/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/800,012

Applicant(s)

LINGLE ET AL.

Examiner

Gwendolyn Blackwell

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1775

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,6-15,19-24 and 32-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,6-15,19-24 and 32-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

1. The Rule 131 Declaration, submitted 2/27/2007, is defective as the location of the reduction to practice of the presently claimed invention is not provided by MPEP 715.07(c).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1, 6-15, 19-24, and 32-39 are rejected 35 U.S.C. 103(a) over United States Patent Application Publication no. 2004/0005467, Neuman et al.

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Regarding claims 1, 15, and 32-39

Neuman et al disclose a heat treatable coated article with zinc oxide inclusive contact layers. The heat treated coated article can be part of windows or laminated windshields, (page 3, section 0027). The multilayered coating is comprised of:

silicon nitride/1st lower contact layer/IR reflecting layer/1st upper contact layer/dielectric layer/silicon nitride/2nd lower contact layer/IR reflecting layer/2nd upper contact layer/dielectric layer/protective dielectric layer

wherein the lower contact layer is a zinc oxide inclusive layer, the IR reflecting layer is comprised of silver, and the upper contact layer is an oxide of NiCr, (page 4, sections 0034-0038). Monolithically the sheet resistance after heat treatment is less than or equal to 2.5 ohms/square, which would encompass 2.1, with a corresponding visible transmission of 85% which is calculated from $T_{vis}/R_s=34$, (page 5, Table 3). The dielectric layer above the 2nd upper contact layer can be tin oxide with a layer of silicon nitride formed thereon, (page 4, section 0042). Table 1 demonstrates that the preferred range for the thickness of the tin oxide and silicon nitride layer range from 0-750 Å each, (page 5, section 0045). Post heat treatment the coated substrate has a haze value of less than or equal to 0.35, which would encompass 3.0, (page 6, Table 6). Neuman et al does not specifically disclose the sheet resistance, the non-use of titanium oxide, or that upper tin oxide layer is significantly thicker than the outer silicon nitride layer.

Absent a showing of criticality with respect to thickness (a result effective variable), it would have been obvious to a person of ordinary skill in the art at the time of the invention to adjust the thickness of the layers through routine experimentation in order to achieve a coated article having a high T_{vis}/R_s , (page 3, section 0030). It has been held that discovering an.

optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

The limitation of present claims 1 and 15 require that the sheet resistance is less than or equal to 2.1 which falls within the range of less than or equal to 2.5 set forth above. In the alternative, it would have been within the skill of one in the art at the time of invention to optimize the sheet resistance and haze value of the coated article in order to increase the visible transmission to sheet resistance ratio through the use of Si-rich silicon nitride inclusive layer used in combination with a zinc oxide inclusive layer to lower the sheet resistance. By increasing the ratio the solar performance and visible transmission of the coated article are increased, (page 3, sections 0026 and 0029-0031).

In the alternative, while there are no specific examples without the use of titanium oxide next to the glass substrate, it would have been within the skill of one in the art at the time of invention to leave out the titanium oxide layer as it is considered an optional layer, (page 4, section 0034).

Regarding claims 6 and 19

The limitations of present claims 6 and 19 require that the haze value is less than or equal to 0.30 which falls within the range of less than or equal to 0.35 as set forth above. Absent a showing of criticality with respect to the haze value (a result effective variable), it would have been obvious to a person of ordinary skill in the art at the time of the invention to adjust the haze value through routine experimentation in order to achieve a coated article which has the required optical characteristics, such as a high visible light transmission. It has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

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Regarding claims 7 and 20

The silicon nitride layers can be silicon rich and non-stoichiometric represented by Si_xN_y wherein x/y may be from 0.76-1.5, (page 4m section 0040), 7 and 20.

Regarding claims 8-12 and 21

Tin oxide with an overcoat of silicon nitride is formed over the 2nd upper contact layer, (page 4, section 0042), claim 8. Tin oxide can also be located between the 1st IR reflecting layer and the second layer comprising silicon nitride, (page 4, section 0041), claim 9. An oxide of Ni and/or Cr acts as the 1st and 2nd upper contact layers, (page 4, section 0037), claim 10. The silicon and zinc targets are doped with about 10% aluminum, which results in silicon nitride inclusive and zinc oxide inclusive layers containing aluminum, (page 7, section 0064), claims 11-12. The IR reflecting layers are formed on the lower contact layers which are comprised of zinc oxide, (page 4, sections 0034 and 0038), claim 21.

Regarding claims 13 and 14

The layer comprised of an oxide of NiCr ranges in thickness from 10-100 angstroms with the second silicon nitride layer is comprised of 50-450 angstroms, (page 5, Table 1, claims 13-14).

Regarding claims 22-24

Because Neuman et al disclose that the coated invention can be used with a laminated windshield and that the only type of substrate used with the Neuman et al invention is based on glass, and since it is well known in the art that these particular types of coatings are placed between two substrates when laminated, that laminated windshield disclosed on page 3, section

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0027 is considered to be comprised of two glass substrates with the coating of Neuman et al formed therebetween.

When the structure recited in the reference is substantially identical to that of the claims, the claimed properties or function are presumed inherent. *MPEP 2112.01*. Because the prior art exemplifies the applicant's claimed layer structure, the claimed physical relating to the visible light transmission is present in the prior art of record. Absent an objective showing to the contrary the addition of the claimed physical property to the claim does not provide a patentable distinction over the prior art of record, claims 22-24.

Response to Arguments

5. Applicant's arguments filed February 27, 2007 have been fully considered but they are not persuasive. Because the 131 declaration is defective, the arguments relating the 131 declaration removing Neuman as prior art are moot.

6. For the reason set forth above , the 35 USC 103 rejection is maintained.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

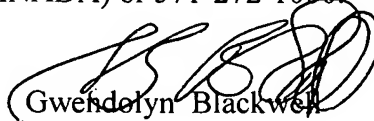
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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gwendolyn Blackwell whose telephone number is (571) 272-1533. The examiner can normally be reached on Monday - Thursday; 6:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on (571) 272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Gwendolyn Blackwell
Examiner
Art Unit 1775

gab